

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A magnetic memory comprising:

a plurality of magnetic memory cells, each of the plurality of magnetic memory cells including a first magnetic element;

at least one programmable current source for programming a portion of the plurality of magnetic memory cells, each of the at least one programmable current source including a controller and a current source coupled to the controller, the controller including at least one second magnetic element, the at least one second magnetic element being substantially the same as the first magnetic element, the controller for determining a current provided by the current source based on the at least the second magnetic element, the at least one second magnetic element integrated into and not being programmed by the at least one programmable current source for data storage.

2. (Currently Amended) ~~The magnetic memory of claim 1~~ A magnetic memory comprising:

a plurality of magnetic memory cells, each of the plurality of magnetic memory cells including a first magnetic element;

at least one programmable current source for programming a portion of the plurality of magnetic memory cells, each of the at least one programmable current source including a controller and a current source coupled to the controller, the controller including at least one second magnetic element, the at least one second magnetic element being substantially the same as the first magnetic element, the controller for determining a current provided by the current source based on the at least the second magnetic element;

wherein the current source further includes a current mirror.

3. (Original) The magnetic memory of claim 2 wherein the controller further includes bias circuitry.

4. (Currently Amended) ~~The magnetic memory of claim 1~~ A magnetic memory comprising:

a plurality of magnetic memory cells, each of the plurality of magnetic memory cells including a first magnetic element;

at least one programmable current source for programming a portion of the plurality of magnetic memory cells, each of the at least one programmable current source including a controller and a current source coupled to the controller, the controller including at least one second magnetic element, the at least one second magnetic element being substantially the same as the first magnetic element, the controller for determining a current provided by the current source based on the at least the second magnetic element;

wherein the controller further includes a plurality of latch circuits including the at least the second magnetic element, the plurality of latch circuits for selectively driving the current source.

5. (Currently Amended) ~~The magnetic memory of claim 1~~ A magnetic memory comprising:

a plurality of magnetic memory cells, each of the plurality of magnetic memory cells including a first magnetic element;

at least one programmable current source for programming a portion of the plurality of magnetic memory cells, each of the at least one programmable current source including a controller and a current source coupled to the controller, the controller including at least one second magnetic element, the at least one second magnetic element being substantially the same as the first magnetic element, the controller for determining a current provided by the current source based on the at least the second magnetic element;

wherein the controller further includes a temperature sensor for allowing the current source to provide a temperature sensitive current.

6. (Original) A magnetic memory comprising:

a plurality of magnetic memory cells, each of the plurality of magnetic memory cells including a first magnetic element;

a first adaptive current source including a first programmable current source for programming a portion of the plurality of magnetic memory cells, the first programmable current source including a first controller and a first current source coupled to the first controller, the first controller for determining a first current provided by the first current source, the first controller including at least a second magnetic element, the at least the second magnetic element being substantially the same as the first magnetic element, the first controller controlling the first current provided by the first current source based on the at least the second magnetic element; and

a second adaptive current source including a second programmable current source for programming the portion of the plurality of magnetic memory cells, the second programmable current source including a second controller and a second current source coupled to the second controller, the second controller for determining a second current provided by the second current source, the second controller including at least a third magnetic element, the at least the third magnetic element being substantially the same as the first magnetic element, the second controller controlling the second current provided by the second current source based on the at least the third magnetic element.

7. (Original) The magnetic memory of claim 6 wherein the first current source further includes a current mirror.

8. (Original) The magnetic memory of claim 7 wherein the first controller further includes bias circuitry.

9. (Original) The magnetic memory of claim 6 wherein the second current source further includes a current mirror.

10. (Original) The magnetic memory of claim 8 wherein the second controller further includes bias circuitry.

11. (Original) The magnetic memory of claim 6 wherein the first controller further includes a plurality of latch circuits including the at least the second magnetic element, the plurality of latch circuits for selectively driving the first current source.

12. (Original) The magnetic memory of claim 6 wherein the second controller further includes a plurality of latch circuits including the at least the third magnetic element, the plurality of latch circuits for selectively driving the second current source.

13. (Original) The magnetic memory of claim 6 wherein the controller further includes a temperature sensor for allowing the current source to provide a temperature sensitive current.

14. (Currently Amended) A method for providing a magnetic memory comprising:

(a) providing a plurality of magnetic memory cells, each of the plurality of magnetic memory cells including a first magnetic element;

(b) providing at least one programmable current source for programming a portion of the plurality of magnetic memory cells, each of the at least one programmable current source including a controller and a current source coupled to the controller, the controller for determining a current provided by the current source, the controller including at least one second magnetic element, the at least one second magnetic element being substantially the same as the first magnetic element, the controller controlling the current provided by the current source based on the at least the second magnetic element, the at least one second magnetic element integrated into and not being programmed by the at least one programmable current source for data storage.

15. (Original) A method for providing magnetic memory comprising:

(a) providing a plurality of magnetic memory cells, each of the plurality of magnetic memory cells including a first magnetic element;

(b) providing a first adaptive current source including a first programmable current source for programming a portion of the plurality of magnetic memory cells, the first programmable current source including a first controller and a first current source coupled to the first controller, the first controller for determining a first current provided by the first current source, the first controller including at least a second magnetic element, the at least the second magnetic element being substantially the same as the first magnetic element, the first controller controlling the first current provided by the first current source based on the at least the second magnetic element; and

(c) providing a second adaptive current source including a second programmable current source for programming the portion of the plurality of magnetic memory cells, the second

programmable current source including a second controller and a second current source coupled to the second controller, the second controller for determining a second current provided by the second current source, the second controller including at least a third magnetic element, the at least the third magnetic element being substantially the same as the first magnetic element, the second controller controlling the second current provided by the second current source based on the at least the third magnetic element.

16. (Currently Amended) A method for utilizing a magnetic memory including a plurality of magnetic memory cells, each of the plurality of magnetic memory cells including at least a first magnetic element, the method comprising:

programming at least a second magnetic element of at least one controller in at least programmable current source, the least one second magnetic element being substantially the same as the first magnetic element, the programmable current source for programming a portion of the plurality of magnetic memory cells, the at least one programmable current source also including at least one current source coupled to the at least one controller, the at least one second magnetic element integrated into and not being programmed by the at least one programmable current source for data storage;

using the at least one controller to control at least one current provided by the at least one current source based upon the at least the second magnetic element.

17. (Original) A method of programming magnetic memory including a plurality of magnetic memory cells, each of the plurality of magnetic memory cells including a first magnetic element, the method comprising:

programming at least a second magnetic element of at least a first adaptive current source, the first adaptive current source including a first programmable current source for programming a portion of the plurality of magnetic memory cells, the first programmable current source including a first controller and a first current source coupled to the first controller, the first controller for determining a first current provided by the first current source based on the at least the second magnetic element, the first controller including the at least the second magnetic element, the at least the second magnetic element being substantially the same as the first magnetic element; and

programming at least a third magnetic element of a second adaptive current source, the second adaptive current source including a second programmable current source for programming the portion of the plurality of magnetic memory cells, the second programmable current source including a second controller and a second current source coupled to the second controller, the second controller for determining a second current provided by the second current source based on the at least the third magnetic element, the second controller including the at least the third magnetic element, the at least the third magnetic element being substantially the same as the first magnetic element.